IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A receive method in a communication system, comprising the steps of:

receiving a ~~receive~~ signal ~~converted into~~ of a carrier band;

generating an in-phase signal and a quadrature signal from ~~said receive~~ the signal received in the receiving step ;

compensating an orthogonality error and gain imbalance for said ~~receive~~ in-phase signal and said quadrature signal; and

~~converting said receive signal and said quadrature signal into first complex frequency band signal by first analytic sine wave, said first analytic sine wave being a complex signal including cosine wave as the real components and including sine wave as the imaginary components~~

inputting said in-phase signal and said quadrature signal into a first complex frequency converter, and also inputting said in-phase signal and said quadrature signal into a second complex frequency converter, wherein the first complex frequency converter complex-multiplies said in-phase signal and said quadrature signal by a first analytic sine wave having a first frequency to generate a first complex frequency band signal, and the second complex frequency converter complex-multiplies said in-phase signal and said quadrature signal by a second analytic sine wave having a second frequency to generate a second complex frequency band signal.

Claim 2 (Currently Amended): The receive method as claimed in claim 1, said step of compensating an orthogonality error and gain imbalance comprising the steps of:

dividing said quadrature signal into divided quadrature signals;

assigning a weight to each of said divided quadrature signals;

adding said ~~receive~~ in-phase signal to one of said divided quadrature signals.

Claim 3 (Currently Amended): The receive method as claimed in claim 1, said step of compensating an orthogonality error and gain imbalance comprising the steps of:

assigning a weight to each of said quadrature signal and said ~~receive~~ in-phase signal; and

adding said quadrature signal to ~~and~~ said ~~receive~~ in-phase signal.

Claims 4-9 (Canceled).

Claim 10 (Currently Amended): A receive method in a communication system, comprising the steps of:

receiving a signal of a carrier band;

generating a quadrature signal and an in-phase signal from said signal received in said receiving step;

compensating an orthogonality error and gain imbalance for said in-phase signal and said quadrature signal; and

converting said in-phase signal and said quadrature signal into a complex frequency band signal by an analytic sine wave, said analytic sine wave being a complex signal including a cosine wave as a real component and including a sine wave as an imaginary component,

said step of compensating an orthogonality error and gain imbalance including the steps of

dividing said quadrature signal into divided quadrature signals,

assigning a weight to each of said divided quadrature signals,

adding said in-phase signal to one of said divided quadrature signals, wherein

the receiving step ~~The receive method as claimed in claim 6,~~ further ~~comprising~~ including the steps of[[:]]

detecting a difference signal between ~~on the basis of~~ said ~~first~~ complex frequency band signal[[,]] and a predetermined signal ~~and said desired signal;~~, and

determining said weight according to ~~a complex frequency band signal and~~ said difference signal.

Claim 11 (Currently Amended): A receive method in a communication system, comprising the steps of:

receiving a signal of a carrier band;

generating a quadrature signal and an in-phase signal from said signal received in said receiving step;

compensating an orthogonality error and gain imbalance for said in-phase signal and said quadrature signal; and

converting said in-phase signal and said quadrature signal into a complex frequency band signal by an analytic sine wave, said analytic sine wave being a complex signal including a cosine wave as a real component and including a sine wave as an imaginary component,

said step of compensating an orthogonality error and gain imbalance including the steps of

assigning a weight to each of said quadrature signal and said in-phase signal, and

adding said quadrature signal to said in-phase signal, wherein

the receiving step ~~The receive method as claimed in claim 7,~~ further ~~comprising~~ including the steps of[[:]]

detecting a difference signal between ~~on the basis of~~ said ~~first~~ complex frequency band signal[[,]] and a predetermined signal ~~and said desired signal~~;

determining said weight according to ~~a complex frequency band signal and~~ said difference signal.

Claim 12 (Currently Amended): A receive method in a communication system, comprising the steps of:

receiving a signal of a carrier band;

generating a quadrature signal and an in-phase signal from said signal received in said receiving step;

compensating an orthogonality error and gain imbalance for said in-phase signal and said quadrature signal; and

converting said in-phase signal and said quadrature signal into a complex frequency band signal by an analytic sine wave, said analytic sine wave being a complex signal including a cosine wave as a real component and including a sine wave as an imaginary component,

said step of compensating an orthogonality error and gain imbalance including the steps of

dividing said quadrature signal into divided quadrature signals,

assigning a weight to each of said divided quadrature signals,

adding said in-phase signal to one of said divided quadrature signals, wherein

the receiving step ~~The receive method as claimed in claim 6,~~ further comprising the steps of[[:]]

sampling said first complex frequency band signal at a symbol rate by using an adaptive digital filter to obtain a sampled signal,

detecting a difference signal between ~~according to~~ a predetermined signal~~, a~~ and said sampled signal ~~and said desired signal;~~, and

determining said weight according to ~~a complex frequency band signal and~~ said difference signal, and controlling said adaptive digital filter such that said sampled signal ~~to be~~ becomes a predetermined sampling phase.

Claim 13 (Currently Amended): A receive method in a communication system, comprising the steps of:

receiving a signal of a carrier band;

generating a quadrature signal and an in-phase signal from said signal received in said receiving step;

compensating an orthogonality error and gain imbalance for said in-phase signal and said quadrature signal; and

converting said in-phase signal and said quadrature signal into a complex frequency band signal by an analytic sine wave, said analytic sine wave being a complex signal including a cosine wave as a real component and including a sine wave as an imaginary component,

said step of compensating an orthogonality error and gain imbalance including the steps of

assigning a weight to each of said quadrature signal and said in-phase signal, and

adding said quadrature phase signal to said in-phase signal,

the receiving step ~~The receive method as claimed in claim 7,~~ further ~~comprising~~ including the steps of[[:]]

sampling said first complex frequency band signal at a symbol rate by using an adaptive digital filter to obtain a sampled signal,

detecting a difference signal ~~according to~~ between a predetermined signal~~, a~~ and said sampled signal ~~and said desired signal;~~, and

determining said weight according to ~~a complex frequency band signal and~~ said difference signal, and controlling said adaptive digital filter such that said sampled signal ~~to be~~ becomes a predetermined sampling phase.

Claim 14 (Currently Amended): A receive method in a communication system, comprising the steps of:

receiving a receive signal ~~converted into~~ of a carrier band;

performing analog quasi-coherent detection on said ~~receive~~ signal receives in said receiving step and outputting in-phase and quadrature signals;

performing analog-to-digital conversion on said in-phase and quadrature signals;

inputting said in-phase signal and said quadrature signal into a first complex frequency converter, and also inputting said in-phase signal and said quadrature signal into a second complex frequency converter, wherein the first complex frequency converter complex-multiplies said in-phase signal and said quadrature signal by a first analytic sine wave having a first frequency to generate a first complex baseband signal, and the second complex frequency converter complex-multiplies said in-phase signal and said quadrature signal by a second analytic sine wave having a second frequency to generate a second complex baseband signal;

~~dividing said in-phase and quadrature signals into first in-phase and quadrature signal and second in-phase and quadrature signal;~~

~~converting said first in-phase and quadrature signal into a complex baseband signal by a first analytic signal, and converting said second in-phase and quadrature signal into a complex baseband signal by a second analytic signal;~~

applying said first complex baseband ~~in-phase and quadrature~~ signal to a first low-pass filter, and applying said second complex baseband ~~in-phase and quadrature~~ signal to a second low-pass filter; and

applying said first complex baseband ~~in-phase and quadrature~~ signal passed through said first low-pass filter and said second complex baseband ~~in-phase and quadrature~~ signal passed through said second low-pass filter to an adaptive interference canceler so as to remove~~; and removing~~ interference components included in said ~~first~~ in-phase signal and said quadrature signal ~~and said second in-phase and quadrature signal~~.

Claim 15 (Original): The receive method as claimed in claim 14, wherein said adaptive interference canceler separates desired frequency band components and interference signal components, by using orthogonalization coefficients, from an input signal in which said desired frequency band components and said interference signal components are mixed.

Claim 16 (Original): The receive method as claimed in claim 15, wherein said adaptive interference canceler estimates said orthogonalization coefficients according to changes of orthogonality in said analog quasi-coherent detection.

Claim 17 (Currently Amended): A receiver in a communication system, comprising:

a receiving part which receives a ~~receive~~ signal ~~converted into~~ of a carrier band;

a generating part which generates ~~a quadrature~~ an in-phase signal ~~from said receive signal~~ and a quadrature signal from said signal received by said receiving part;

a compensating part which compensates an orthogonality error and gain imbalance for said ~~receive~~ in-phase signal and said quadrature signal;

a first complex frequency converter which receives said in-phase signal and said quadrature signal; and

a second complex frequency converter which receives said in-phase signal and said quadrature signal,

wherein said first complex frequency converter complex-multiplies said in-phase signal and said quadrature signal by a first analytic sine wave having a first frequency to generate a first complex frequency band signal, and the second complex frequency converter complex-multiplies said in-phase signal and said quadrature signal by a second analytic sine wave having a second frequency to generate a second complex frequency band signal

~~and~~

~~a first converting part which converts said receive signal and said quadrature signal into first complex frequency band signal by first analytic sine wave, said first analytic sine wave being a complex signal including cosine wave as the real components and including sine wave as the imaginary components~~.

Claim 18 (Currently Amended): The receiver as claimed in claim 17, said compensating part comprising:

a dividing part which divides said quadrature signal into divided quadrature signals;

an assigning part which assigns a weight to each of said divided quadrature signals; and

an adding part which adds said ~~receive~~ in phase signal to one of said divided quadrature signals.

Claim 19 (Currently Amended): The receiver as claimed in claim 17, said compensating part comprising:

an assigning part which assigns a weight to each of said quadrature signal and said ~~receive~~ in-phase signal; and

an adding part which adds said quadrature signal ~~and~~ to said ~~receive~~ in-phase signal.

Claims 20-25 (Canceled).

Claim 26 (Currently Amended): The receiver as claimed in claim 22, further comprising:

a detecting part which detects a difference signal between ~~on the basis of~~ said first complex frequency band signal, and a predetermined signal ~~and said desired signal~~; and

a determining part which determines said weight according to ~~a complex frequency band signal and~~ said difference signal.

Claim 27 (Currently Amended): The receiver as claimed in claim 23, further comprising:

a detecting part which detects a difference signal between ~~on the basis of~~ said first complex frequency band signal[[,]] and a predetermined signal ~~and said desired signal~~; and

a determining part which determines said weight according to ~~a complex frequency band signal and~~ said difference signal.

Claim 28 (Currently Amended): The receiver as claimed in claim 22, further comprising:

a sampling part which produces a sampled signal by sampling ~~samples~~ said first complex frequency band signal at a symbol rate by using an adaptive digital filter to obtain a sampled signal;

a detecting part which detects a difference signal ~~according to~~ between a predetermined signal~~, a~~ and the sampled signal ~~and said desired signal~~; and

a determining part which determines said weight according to ~~a complex frequency band signal and~~ said difference signal, and controlling said adaptive digital filter such that said sampled signal ~~to be~~ becomes a predetermined sampling phase.

Claim 29 (Currently Amended): The receiver as claimed in claim 23, further comprising:

a sampling part which produces a sampled signal by sampling ~~samples~~ said first complex frequency band signal at a symbol rate by using an adaptive digital filter to obtain a sampled signal;

a detecting part which detects a difference signal ~~according to~~ between a predetermined signal~~, a~~ and the sampled signal ~~and said desired signal~~; and

a determining part which determines said weight according to ~~a complex frequency band signal and~~ said difference signal, and controlling said adaptive digital filter such that said sampled signal ~~to be~~ becomes a predetermined sampling phase.

Claim 30 (Currently Amended): A receiver in a communication system, comprising:

a receiving part which receives a ~~receive~~ signal ~~converted into~~ of a carrier band;

an analog quasi-coherent detector which performs analog quasi-coherent detection on said ~~receive~~ signal received by said receiving part and outputting in-phase and quadrature signals;

an analog-to-digital converter which performs analog-to-digital conversion on said in-phase and quadrature signals;

a first complex frequency converter which receives said in-phase signal and said quadrature signal; and

a second complex frequency converter which receives said in-phase signal and said quadrature signal,

wherein the first complex frequency converter complex-multiplies said in-phase signal and said quadrature signal by a first analytic sine wave having a first frequency to generate a first complex baseband signal, and the second complex frequency converter complex-multiplies said in-phase signal and said quadrature signal by a second analytic sine wave having a second frequency to generate a second complex baseband signal;

~~a dividing part which divides said in-phase and quadrature signals into first in-phase and quadrature signal and second in-phase and quadrature signal;~~

~~a first converting part which converts said first in-phase and quadrature signal into a complex baseband signal by a first analytic signal, and a second converting part which converts said second in-phase and quadrature signal into a complex baseband signal by a second analytic signal;~~

a first low-pass filter which ~~removes high frequency band components from said first in-phase and quadrature signal to, and~~ receives said first complex baseband signal;

a second low-pass filter which ~~removes high frequency band components from said second in-phase and quadrature signal~~ receives said second complex baseband signal;

an adaptive interference canceler which receives said first complex baseband ~~in-phase and quadrature~~ signal passed through said first low-pass filter and said second ~~in-phase and quadrature~~ complex baseband signal passed through said second low-pass filter so as to remove~~, and removes~~ interference components included in said ~~first~~ in-phase signal and said quadrature signal ~~and said second in-phase and quadrature signal~~.

Claim 31 (Currently Amended): The receiver as claimed in claim 30, said adaptive interference canceler including a part which separates ~~desired~~ predetermined frequency band components and interference signal components, by using orthogonalization coefficients, from an input signal in which said desired frequency band components and said interference signal components are mixed.

Claim 32 (Original): The receiver as claimed in claim 31, said adaptive interference canceler including an adaptive controller which estimates said orthogonalization coefficients according to changes of orthogonality in said analog quasi-coherent detector.